The Boston Computer Society

SINCLAIR/TIMEX USER GROUP NEWSLETTER

Volume 1, Issue 5 November 1982

This newsletter is produced to inform group members of the agenda and logistics for future meetings, as well as to recap and amplify the information provided at the last meeting. It also provides a forum for members and interested parties to communicate what they have learned or developed relating to Sinclair and Timex computer products. Meetings are open to the public; however, attendees are encouraged to join the Boston Computer Society (BCS).

NEXT MEETING

Date: Wednesday, November 17, 1982
Time: 7:00 p.m.
Place: Large Science Auditorium
UMass, Harbor Campus
(Directions on last page)

AGENDA

Is the ZX-81 or TS-1000 a good gift to someone you know (including yourself) this holiday season? The November/December issue of Computer Update, BCS's magazine, suggests it is. At our November meeting, we will address the pros and cons (mostly pros -- but we're biased), and discuss the problems that a novice user of the machine is likely to encounter. Also, Robert Masters will review VU-CALC, a spread-sheet program being marketed by both Sinclair and Timex.

In addition to the above, we will break up into groups to discuss topics of special interest. Tentatively, we will break into an advanced group and a beginners group. Dave Wood has volunteered to lead the advanced group in a discussion of how the floating-point calculator works.

PLANS FOR FUTURE MEETINGS

In future meetings: we will have a demonstration of the new Timex printer and modem; Mindware has promised an update on their products and plans; and we hope to have a joint meeting with the Robotics User Group of the BCS. The December meeting will be on the 13th. We have not established the itinerary for that meeting and welcome suggestions.

HIGHLIGHTS FROM THE OCTOBER MEETING...

Last meeting we celebrated the first birthday the user group. Ms. Maggie Bruzelius of Sinclair Research, Ltd. and Mr. Dan Ross of Timex Computer Corporation, the top executives of their respective companies in the U.S., each provided a very interesting talk about their company's history, objectives, and products. See articles starting on page 4.

OTHER MEETING ACTIVITIES

October broke the attendance record -- more than 200 people came to hear our guests. This was the first meeting for perhaps as many as one third of those present. Also there were 6 of the original 18 members who first met in Kenmore Square on October 14, 1981.

In addition to the talks by Ms. Bruzelius and Mr. Ross, Sue made her usual plea for attendees to join the BCS and to become active in the user group. A questionnaire was passed out to solicit volunteers and ideas. Also, each vendor who brought a display to the meeting gave a brief pitch:

- Mindware - Michael Levy promised to provide an update of Mindware's products at an upcoming meeting.
- E-Z Key - Henry April described his 60-key keyboard and enclosure.
- Demystifying Computers - Mike Weiskoff described his introductory computer programming course.
- Syntax - Ann Zevnik said a few words about the newsletter she edits and promoted her new quarterly magazine, SQ.
- Compucart - George Peterson displayed a cart for the computer, peripherals, references, etc.
- Sinclair Research, Ltd. - Leonie Baldwin, Cynthia D'Angelo, and Beth Elliott were present to answer questions. They brought an interesting brochure containing a collection of articles about Sinclair. They also had a new Sinclair software listing.
- Timex Computer Corporation - Tricia Bonze, Joanne Ciarlo, and Pam DiLeone were present to answer questions and to demonstrate Timex software. However, they couldn't do much demonstrating because people monopolized the machines playing games.
- Siriusware - Dave Wood described his data tape and BASIC merging utilities. He is targeting his products for programmers as opposed to end-users.

Following the formal meeting, cake, punch, and coffee were enjoyed -- in spite of the fact that the baker misspelt Sincliar.

ACKNOWLEDGEMENT

Our October meeting, the First Anniversary Meeting, was a big success thanks to efforts of the following people:

- Sean O'Rahilly who coordinated all pre-meeting activities in the auditorium.
- John Cahill and Allan Cohen who prepared and posted signs.
- Rick Kane who obtained the facility and ordered refreshments.
- Rosemary Fortin who took the photographs.
- John Kemeny and Dave Wood who manned the membership table.

Thanks also goes to the many people who contributed labor setting up and tearing down the displays. And a special thanks goes to Mindware, Sinclair Research, and Timex for the refreshments.

QUESTIONS AND ANSWERS -- A NEW SERVICE

As a service to members, we are instituting a question and answer section of the newsletter. We have the resources within the group, and through contacts with Sinclair Research and Timex, to answer most any questions you may have. Send your questions to the editor. The address is on the last page.

COMPUTER HINT

With some ZX-81 and TS-1000 computers, you may find lines or shadows between characters. The lines are sometimes more apparent when you add memory or peripherals. It has been suggested that, if the antenna connector/switch box is covered with aluminum foil, the lines are made less objectionable. The foil should make electrical contact with the shield (outer conductor) of the cable going to the computer. Be careful not to short the signal.

WHEREFORE THE DATA STATEMENT

The Sinclair/Timex BASIC interpreter has been criticized for not having DATA, READ, and RESTORE statements. Users familiar with the system realize this is not really a problem. The function of the DATA statements can be mimicked by the computer in many, flexible, ways. However, a novice user often finds himself needing to translate programs from a BASIC language which uses the DATA statement. We offer the following.

The DATA statement allows a programmer to define a list of numbers in his program. The READ statement retrieves these numbers, one at a time, and assigns them to a variable. The RESTORE statement forces the READ to scan the list from the beginning again.

In order to translate a program which has DATA statements, you must:

1. Include the following routine in your program:

```
500  LET DI=DI+1
510  IF D$(DI)=" " THEN GOTO 500
520  LET DJ=DI
530  LET DJ=DJ+1
535  IF DJ> LEN D$ THEN GOTO 550
540  IF D$(DI) <> " " THEN GOTO 530
550  LET D=VAL D$(DI TO DJ-1)
560  LET DI=DJ
570  RETURN
```

2. Have a statement LET DI = 0 somewhere near the beginning of your program (before doing any READs). Follow this by the DATA statement LET D$ = "YOUR DATA HERE". The data elements (i.e., numbers) are separated by blanks. For example, if the program being translated has DATA 5, 10.4, -3, 6.9E-10
then use LET D$ = "5 10.4 -3 6.9E-10"

3. Replace RESTORE statements in the program by LET DI = 0.

4. Finally, replace READ statements by GOSUB 500 followed by LET VARIABLE = D. For example, READ A becomes GOSUB 500 and LET A=D. Error 3 results if you READ passed end of data.

MAGGIE BRUZELIUS -- SINCLAIR

Ms. Maragret Bruzelius, Executive Vice President for the U.S. Operations of Sinclair Research, Ltd., was the first speaker at our October Anniversary meeting. She described her company -- its history, achievements, and plans.

Maggie described Sinclair Research as a high-technology, idea company providing research and development to bring new products to the marketplace. Examples of products developed by Sinclair include the Executive Pocket Calculator (1972), a digital wrist watch (1975), a 2-inch TV (1977), calculators and multimeters (1977-78), the ZX-80 (1980), and the ZX-81 (1981). Clive Sinclair has done this with a very, very small company -- currently only 50 employees worldwide.

The ZX-80 was the first computer to sell for under $200. This was made possible because the ZX-80 containe one tenth the number of parts previously required for a computer. Since the introduction of the ZX-80, Sinclair has sold more than 500,000 computers in 21 countries, more than any other company. Maggie said that the computer is well matched to the job of improving computer literacy, which we all know is essential today.

Sinclair's licensing agreements with Timex allows Timex to use Sinclair's name and technology in North America. Maggie said Sinclair chose Timex because of its marketing capability. She pointed out that, before the licensing agreements, Timex had been the manufacturer of the ZX-81.

As for Spectrum, the new computer Sinclair has developed, Maggie couldn't say when it would find its way to the U.S., because of the "complex agreements made with Timex." She said that there was tremendous demand for the Spectrum in the U.K. (more than 30,000 sold in just three months), and that this demand would have to be satisfied before the computer could be introduced in the U.S.

Maggie concluded by saying that Sinclair was searching for the "world's best computer designer," and that there would be a sizable reward for information leading to his or her "capture."

Maggie presented Sue Mahoney with a check for $100 for the group's library.

OTHER USER GROUPS

For the past two months, we have sent copies of the newsletter to approximately 60 user groups across the country. Syntax has been our best source in identifying these groups. In response, we have heard from eight groups and received copies of newsletters from five: Westinghouse ZX80/81 Users Group, Baltimore, Maryland; Sinclair User's Group of Oklahoma, Tinker AFB, Oklahoma; T/SZ Users Group, Kansas City, Missouri; Gulf Coast Sinclair Users Group, Slidell, Lousiania; and Sinclair User's Network (S.U.N.), Palatine, Illinois. In future issues of this newsletter, we plan to pass along what we learn from these groups. Copies of the newsletters will be maintained in the library.

DAN ROSS -- TIMEX

Mr. Daniel Ross, Vice President of Operations, Timex Computer Corporation, was the second speaker at our Anniversary meeting. He described the Timex company -- its relationship with Sinclair Research, its announced computer products, and its plans for a national user group.

Timex is the company largely responsible for popularizing the wrist watch. According to Dan, this occurred primarily because Timex built an affordable, durable product and put the product in a marketplace where people felt comfortable buying it. In addition to wrist watches, however, Timex has demonstrated the capability to mass-produce many high-technology products. Gyroscopes, Polaroid cameras, and computer assemblies are just some examples.

Timex began manufacturing the ZX-81 for Sinclair in January 1981 in its Dundee, Scotland plant. In 12 months Timex assembled over 500,000 computers. Dan commented that, if Sinclair is the largest seller of computers, then Timex is the largest builder. Timex' first computer product was introduced in the U.S. on July 29. Timex plans to expand into the Mexican and Canadian markets when their production capabilities allow.

Dan suggested that Sinclair selected Timex to market its computer in North America because of Timex' distribution and marketing skills. According to Dan, Timex has the largest distribution system of any company in the world. In addition, Timex has very high brand identification (only two companies have higher). Fifty percent of the world's population see the name "Timex" daily.

The Timex Computer Corporation is a new company, with dedicated sales and support staff. It is headquartered is Middlebury, Connecticut. Distribution for the TS-1000 is currently through computer specialty stores, major department stores, and some chain drug stores. Dan confided that distribution was constrained this year by production capability. Demand has run three times production. Currently, Timex is producing one computer every ten seconds! Manufacturing of the TS-1000 has expanded to plants in Scotland, Portugal, and France. Two of Timex' Far East plants will be used for additional computer products.

Timex launched its advertising campaign in September with national TV and magazine ads. The tag line in Timex' ads is "The Power is Within Your Reach." The magazines were chosen to avoid confusion with Sinclair products, which also are advertised nationwide. Response has been tremendous. For example, in the third week more than 52,000 call attempts were metered for the toll-free phone number in the ads. This tied up all 800 lines into Connecticut. Obviously, Timex was not able to service all the calls. Dan said Timex is busy trying to get a better answer rate.

Timex' toll-free number is 800 24 TIMEX.

Products announced by Timex include the TS-1000 (the ZX-81 plus an additional 1K of RAM), the 16K RAM module, and 30 software packages. Timex will have more that 50 software packages by the end of the year. They will cover four areas: home, education, entertainment, and business.

CONT...

The Timex printer is expected to be available in December. The printer prints 40 columns on heat-sensitive (thermal) paper. It plugs into the computer's edge connector and comes with its own power. In addition, it uses the computer's LPRINT, LLIST, and COPY commands. The computer commands produce 32-column output, but the programmer can use all 40 columns. The printer will sell for $99.95.

The Timex modem is due the first quarter of 1983. It will provide direct interface to the phone line, i.e., to the small connector on the back of your phone. Software to use the modem will also be included. From what Dan said it can be inferred that the modem will provide automatic dial and answer capabilities. The cost of the modem will be $99.95.

Timex has announced that they will market a family of computers. Timex has research and development facilities in Middlebury, Connecticut; Cupertino, California; and France.

Timex will also have a national user group. Each person who returns the warranty card for a new TS-1000 automatically becomes a member. Members will receive a quarterly publication, new product information, and a plastic card good for promotional discounts. Dan said that members of user group organizations may also be given the opportunity to participate in these benefits.

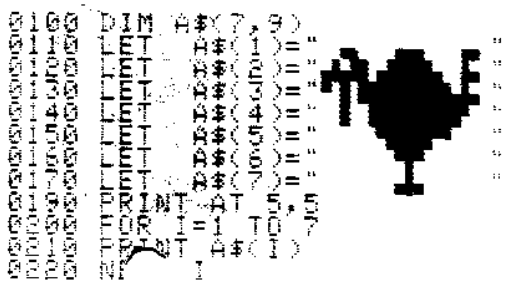
In the question and answer period, Dan stated that Timex is working on a computer literacy series with WGBH, the educational TV station in Boston. He also said that programs in ROM packages are coming in the future, and that several companies are working on such an approach to program distribution.

FLOATING-POINT CALCULATOR

The ZX-81 and TS-1000 perform all arithmetic using floating-point numbers. A floating-point number is the representation of a number by a fraction and an exponent. For example, the number 373 is represented as 0.373×10^3, where 0.373 is the fraction, and 3 is the exponent. Of course, the computer uses binary, and not decimal, representation. Each floating-point number occupies five bytes of storage. The first byte conveys the exponent; the remaining four bytes the sign (positive or negative) and fraction. The four byte fractional part gives the computer eight or nine decimal place accuracy.

The Z-80 microprocessor chip contained in the ZX-81 and TS-1000 is capable of arithmetic with only single bytes and, in some cases, pairs of bytes. To do floating-point arithmetic (with five bytes), rather elaborate software exists in the ROM. This software, plus an area of scratch pad memory referred to as the calculator stack, constitute the floating-point calculator. Details of how it all works will be discussed in the advanced session at the next meeting.

TURKEY



THE THOLEAN WEB

Although we haven't used the Sinclair/Timex to reproduce graphics from the Star Trek movies, we made some graphics from the TV series -- the Tholean web. The main procedure demonstrates a good way to use BASIC (without machine code) to bounce, or ricochet, objects from side walls. This method is useful in writing many kinds of games -- for example billiards.

Here's the program:

```
  5 LET P$="■"                    (the graphics space character)
 10 LET X=0
 20 LET Y=0
 30 LET DX=1
 40 LET DY=1
 50 LET X1=21
 60 LET Y1=31
 70 LET X$="X >= 0 AND X <= X1"  (>=, AND, and <= are tokens)
 80 LET Y$="Y >= 0 AND Y <= Y1"  (ditto)
 90 LET Z$=X$+"AND"+Y$           (AND is a token)
 99 REM MAIN PROCEDURE
100 LET X=X+DX
110 LET Y=Y+DY
120 IF VAL Z$ THEN GOTO 200
130 LET DX=DX*(2*VAL X$-1)
140 LET DY=DY*(2*VAL Y$-1)
150 LET X=X*VAL X$+X1*(X >= 0)* NOT VAL X$
160 LET Y=Y*VAL Y$+Y1*(Y >= 0)* NOT VAL Y$
170 REM OUTPUT FOLLOWS
200 PRINT AT X,Y; P$;
250 GOTO 100
```

Run the program in SLOW mode. Try changing the values in lines 5 through 60.

For fancy, three-dimensional looking images, change lines 120 and 200 to:

```
120 IF VAL Z$ THEN GOTO 180
200 PRINT AT X+I,Y; P$;
```

and add:

```
180 LET I=LEN P$
190 LET I=I-1
220 IF I > 0 THEN GOTO 190
```

Use various length graphics strings for P$. The string consisting of the graphics on 7, G, S, T, and 8 does nicely.

Try adding the following lines:

```
115 LET DX=DX+1.6
135 LET DX=DX+3.2
```

What happens? Hint: Think of line 115 as adding gravitational deceleration, and line 135 as adding inelastic bounces.

SOURCES

Two publications which provide useful information about the Sinclair/Timex computers are Sync and Syntax:

- Sync, P.O. Box 789-M, Morristown, NJ 07960. Sync is a bimonthly magazine which provides well written articles and lots of ads. It costs $12.97 per year.

- Syntax, RD 2, Box 457, Harvard, MA 01451. Syntax is a monthly newsletter providing short articles, hints, reviews, and ads. It costs $29 per year. If you join with five or more members, you will receive three additional issues free.

Occasionally, you will find Sinclair or Timex information in other publications, such as Byte or Microcomputing.

INFORMATION

For more information, contact either: —

Sue Mahoney, Director
c/o The Boston Computer Society
or leave a message at
(617) 361-4736 or 361-5819

or

Cliff Danielson, Editor
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Chelmsford, MA 01824

DIRECTIONS TO THE MEETING

The Sinclair/Timex User Group meets in the Large Science Auditorium (Room 8/2/009) of the University of Massachusets of Boston, Harbor Campus. The Harbor Campus is only three miles from downtown Boston and easily accessible by public or private transportation. From the north or west, take the Southeast Expressway to Exit 17. Turn left onto Columbia Road. Enter the rotary and take the first right (Morrissey Boulevard). Bear right on the traffic island, following UMass/Boston sign. Turn left into the campus. From the south, take the Southeast Expressway to Exit 18 (near the Boston Gas tanks). Follow Morrissey Boulevard northward to the campus. On the MBTA, take the Red Line (Ashmont Train) to Columbia Station. Transfer to the free University suttlebus in the T parking lot.

The Boston Computer Society

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